SEQUENCE LISTING

<110> TRANSGENE SA

<120> Polypeptide having an improved Cytosine deaminase activity

<130> D21447

<140>
<141>

<150> US 60/508 274
<151> 2003-10-06

<150> EP 03/360 087
<151> 2003-07-21

<160> 2

<170> PatentIn Ver. 2.1

<210> 1
<211> 373
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence :Fusion protein having a CDase activity

<300>

<400> 1

```
Met Val Thr Gly Gly Met Ala Ser Lys Trp Asp Gln Lys Gly Met Asp
  1               5                  10                  15

Ile Ala Tyr Glu Glu Ala Ala Leu Gly Tyr Lys Glu Gly Gly Val Pro
             20                  25                  30

Ile Gly Gly Cys Leu Ile Asn Asn Lys Asp Gly Ser Val Leu Gly Arg
         35                  40                  45

Gly His Asn Met Arg Phe Gln Lys Gly Ser Ala Thr Leu His Gly Glu
     50                  55                  60

Ile Ser Thr Leu Glu Asn Cys Gly Arg Leu Glu Gly Lys Val Tyr Lys
 65                  70                  75                  80

Asp Thr Thr Leu Tyr Thr Thr Leu Ser Pro Cys Asp Met Cys Thr Gly
                 85                  90                  95

Ala Ile Ile Met Tyr Gly Ile Pro Arg Cys Val Val Gly Glu Asn Val
```

100 105 110

Asn Phe Lys Ser Lys Gly Glu Lys Tyr Leu Gln Thr Arg Gly His Glu
115 120 125

Val Val Val Val Asp Asp Glu Arg Cys Lys Lys Ile Met Lys Gln Phe
130 135 140

Ile Asp Glu Arg Pro Gln Asp Trp Phe Glu Asp Ile Gly Glu Ala Ser
145 150 155 160

Glu Pro Phe Lys Asn Val Tyr Leu Leu Pro Gln Thr Asn Gln Leu Leu
165 170 175

Gly Leu Tyr Thr Ile Ile Ser Asn Lys Asn Thr Thr Arg Pro Asp Phe
180 185 190

Ile Phe Tyr Ser Asp Arg Ile Ile Arg Leu Leu Val Glu Glu Gly Leu
195 200 205

Asn His Leu Pro Val Gln Lys Gln Ile Val Glu Thr Asp Thr Asn Glu
210 215 220

Asn Phe Glu Gly Val Ser Phe Met Gly Lys Ile Cys Gly Val Ser Ile
225 230 235 240

Val Arg Ala Gly Glu Ser Met Glu Gln Gly Leu Arg Asp Cys Cys Arg
245 250 255

Ser Val Arg Ile Gly Lys Ile Leu Ile Gln Arg Asp Glu Glu Thr Ala
260 265 270

Leu Pro Lys Leu Phe Tyr Glu Lys Leu Pro Glu Asp Ile Ser Glu Arg
275 280 285

Tyr Val Phe Leu Leu Asp Pro Met Leu Ala Thr Gly Gly Ser Ala Ile
290 295 300

Met Ala Thr Glu Val Leu Ile Lys Arg Gly Val Lys Pro Glu Arg Ile
305 310 315 320

Tyr Phe Leu Asn Leu Ile Cys Ser Lys Glu Gly Ile Glu Lys Tyr His
325 330 335

Ala Ala Phe Pro Glu Val Arg Ile Val Thr Gly Ala Leu Asp Arg Gly
340 345 350

Leu Asp Glu Asn Lys Tyr Leu Val Pro Gly Leu Gly Asp Phe Gly Asp
355 360 365

Arg Tyr Tyr Cys Val
370

<210> 2
<211> 216
<212> PRT
<213> Saccharomyces cerevisiae

<400> 2

```
Met Ser Ser Glu Pro Phe Lys Asn Val Tyr Leu Leu Pro Gln Thr Asn
 1               5                  10                  15

Gln Leu Leu Gly Leu Tyr Thr Ile Ile Ser Asn Lys Asn Thr Thr Arg
            20                  25                  30

Pro Asp Phe Ile Phe Tyr Ser Asp Arg Ile Ile Arg Leu Leu Val Glu
        35                  40                  45

Glu Gly Leu Asn His Leu Pro Val Gln Lys Gln Ile Val Glu Thr Asp
    50                  55                  60

Thr Asn Glu Asn Phe Glu Gly Val Ser Phe Met Gly Lys Ile Cys Gly
65                  70                  75                  80

Val Ser Ile Val Arg Ala Gly Glu Ser Met Glu Gln Gly Leu Arg Asp
                85                  90                  95

Cys Cys Arg Ser Val Arg Ile Gly Lys Ile Leu Ile Gln Arg Asp Glu
            100                 105                 110

Glu Thr Ala Leu Pro Lys Leu Phe Tyr Glu Lys Leu Pro Glu Asp Ile
        115                 120                 125

Ser Glu Arg Tyr Val Phe Leu Leu Asp Pro Met Leu Ala Thr Gly Gly
    130                 135                 140

Ser Ala Ile Met Ala Thr Glu Val Leu Ile Lys Arg Gly Val Lys Pro
145                 150                 155                 160

Glu Arg Ile Tyr Phe Leu Asn Leu Ile Cys Ser Lys Glu Gly Ile Glu
                165                 170                 175

Lys Tyr His Ala Ala Phe Pro Glu Val Arg Ile Val Thr Gly Ala Leu
            180                 185                 190

Asp Arg Gly Leu Asp Glu Asn Lys Tyr Leu Val Pro Gly Leu Gly Asp
        195                 200                 205

Phe Gly Asp Arg Tyr Tyr Cys Val
    210                 215
```